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Document Listing

Document	Selected Pages	Page Range
US006159724	7	1 - 7
US003858307	5	1 - 5
Total (2)	12	-

(1970-)
13532 Food Technology-Preparation, Processing and Storage (1970-)
32000 Microbiological Apparatus, Methods and Media
39003 Food and Industrial Microbiology-Food and Beverage Fermentation
(1970-)

BIOSYSTEMATIC CODES:

15000 Fungi-Unspecified

3/9/7 (Item 7 from file: 5)

DIALOG(R) File 5:Biosis Previews(R)
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10880954 BIOSIS NO.: 199799502099

A novel and practical yeast vitality method based on magnesium ion release.

AUTHOR: Mochaba F M(a); O'Connor-Cox E S C; Axcell B C

AUTHOR ADDRESS: (a) South African Breweries Brewing Res. Development
Department, South African Breweries Beer Divisi**South Africa

JOURNAL: Journal of the Institute of Brewing 103 (2):p99-102 1997

ISSN: 0046-9750

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: Using a commercial lager brewing yeast, the immediate release of magnesium, potassium and phosphate ions by calls when inoculated into wort was evaluated to be directly related to its subsequent fermentation performance. Yeast which released appreciable amounts of these ions immediately after inoculation mediated improved fermentations as evidenced by better growth, higher ethanol concentrations and lower

diacetyl levels at the end of fermentation. Conversely, yeast that absorbed these ions or released them at very low concentrations performed poorly throughout fermentation producing beers with lower ethanol concentrations and higher diacetyl levels. These observations led to the identification and development of a rapid, practical and highly sensitive method to measure Mg++ released or absorbed by yeast as an indicator of its vitality and a predictor of its subsequent fermentative performance. Full method details of the Magnesium Release Test (MRT) are given.

REGISTRY NUMBERS: 22537-22-0: MAGNESIUM ION; 7439-95-4: MAGNESIUM;
7440-09-7: POTASSIUM; 14265-44-2: PHOSPHATE; 64-17-5: ETHANOL; 64-17-5:
ALCOHOL

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Bioprocess
Engineering; Foods; Metabolism

BIOSYSTEMATIC NAMES: Ascomycetes--Fungi, Plantae; Fungi-Unspecified--
Fungi, Plantae

ORGANISMS: fungus (Fungi - Unspecified); Saccharomyces cerevisiae
(Ascomycetes)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): fungi; microorganisms;
nonvascular plants; plants

CHEMICALS & BIOCHEMICALS: MAGNESIUM ION; MAGNESIUM; POTASSIUM;
PHOSPHATE; ETHANOL; ALCOHOL

MISCELLANEOUS TERMS: Research Article; ALCOHOL; ALCOHOLIC BEVERAGE;
ANALYTICAL METHOD; BEER; BIOBUSINESS; BIOPROCESS ENGINEERING;

BIOTECHNOLOGY; BREWING; CONCENTRATION; ETHANOL; FERMENTATION; FOOD
PROCESSING METHOD; FOODS; MAGNESIUM; MAGNESIUM RELEASE TEST;

METHODOLOGY; MICROBIAL METHOD; PHOSPHATE; POTASSIUM; RELEASE; VITALITY

CONCEPT CODES:

10060 Biochemical Studies-General

10502 Biophysics-General Biophysical Studies

13502 Food Technology-General; Methods

39008 Food and Industrial Microbiology-General and Miscellaneous

51519 Plant Physiology, Biochemistry and Biophysics-Metabolism

BIOSYSTEMATIC CODES:

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Summary

Document	Pages	Printed	Missed
US006159724	7	7	0
US003858307	5	5	0
Total (2)	12	12	0

Measurement and Methods

BIOSYSTEMATIC CODES:

15100 Ascomycetes

3/9/5 (Item 5 from file: 5)

DIALOG(R) File 5: Biosis Previews(R)

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11429336 BIOSIS NO.: 199800210668

Practical procedures to measure yeast viability and vitality prior to pitching.

AUTHOR: Mochaba F(a); O'Connor-Cox E S C; Axcell B C

AUTHOR ADDRESS: (a) S. Afr. Brew. Beer Div., Brewing Res. Dev. Dep., P.O.
Box 782178, Sandton 2146**South AfricaJOURNAL: Journal of the American Society of Brewing Chemists 56 (1):p1-6
1998

ISSN: 0361-0470

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

SUMMARY LANGUAGE: English; Spanish

ABSTRACT: It is common practice for brewers to calculate yeast inoculation rates based on some measure of cell mass or count combined with a simple viability stain, normally methylene blue. The limitations of this procedure are well known, as yeast performance cannot be predicted and methylene blue staining is notoriously inaccurate if the actual cell viability drops below 95%. In this research, we describe a series of steps recommended to overcome the problems associated with the normal pitching procedures. The wet weight of a slurry or some measure of its biomass is first determined. The pH of the slurry is then measured and, if found to be significantly higher than the end beer pH, the slurry has undergone extensive autolysis and is rejected for reuse. If the slurry passes the pH test, it is then subjected to a protease test. If the value generated from this assay is above the set specification, the slurry is discarded due to a loss in cell integrity and an increase in cell permeability, both indicative of poor yeast quality. If the slurry passes the protease test, it is subjected to a vitality assay, the Magnesium Release Test. Should the slurry also pass the set specification for this test, it is reused for subsequent fermentations with a high degree of confidence in the performance of the yeast. This procedure was proven at scales ranging from laboratory (2 L) to plant (3,000 hL) volumes, and can lead to proactive fermentation control, predictive fermentor residency times, and better quality end beers. The methods are all simple, rapid, and easily implemented in commercial brewery laboratories.

REGISTRY NUMBERS: 7439-95-4: MAGNESIUM; 9001-92-7: PROTEASE

DESCRIPTORS:

MAJOR CONCEPTS: Foods

BIOSYSTEMATIC NAMES: Fungi--Plantae

ORGANISMS: yeast (Fungi)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Fungi; Microorganisms;
Nonvascular Plants; PlantsCHEMICALS & BIOCHEMICALS: magnesium release test--yeast viability
measurement method, yeast vitality measurement method; protease test--
yeast viability measurement method, yeast vitality measurement method

METHODS & EQUIPMENT: pitching procedure--processing method

INDUSTRY: brewing industry

MISCELLANEOUS TERMS: beer; fermentation control; slurry pH

CONCEPT CODES:

13512 Food Technology-Malts, Brews and Other Fermentation Products

13502 Food Technology-General; Methods

13530 Food Technology-Evaluations of Physical and Chemical Properties

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13502 Food Technology-General; Methods
13512 Food Technology-Malts, Brews and Other Fermentation Products
39008 Food and Industrial Microbiology-General and Miscellaneous
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
BIOSYSTEMATIC CODES:
15100 Ascomycetes

3/9/4 (Item 4 from file: 5)
DIALOG(R) File 5:Biosis Previews(R)
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11764179 BIOSIS NO.: 199900010288

Magnesium as a stress-protectant for industrial strains of *Saccharomyces cerevisiae*.

AUTHOR: Walker Graeme M(a)

AUTHOR ADDRESS: (a)Sch. Molecular Life Sci., Univ. Abertay Dundee, Dundee
DD1 1HG**UK

JOURNAL: Journal of the American Society of Brewing Chemists 56 (3):p
109-113 1998

ISSN: 0361-0470

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: During brewery fermentations, individual yeast cells may be confronted with a variety of environmental stresses that impair yeast growth and fermentative metabolism. An understanding of the stress physiology of industrial yeasts is therefore important in order to counteract deleterious effects of stress on fermentation and, ultimately, product quality. The present study describes the influence of magnesium ions in preventing cell death caused by temperature shock and ethanol toxicity in *Saccharomyces cerevisiae* yeast strains employed in brewing, distilling, and wine fermentations. Results obtained show that, by increasing the extracellular availability of magnesium ions, physiological protection may be conferred on temperature- and ethanol-stressed yeast cells with respect to culture viability and growth. This practical approach is envisaged to offer benefits to alcoholic fermentation processes in terms of enhancing the viability of the yeasts employed. It is proposed that magnesium prevents stress-induced damage to yeast cells by protecting the structural and functional integrity of the plasma membrane.

REGISTRY NUMBERS: 7439-95-4: MAGNESIUM; 22537-22-0: MAGNESIUM IONS; 64-17-5
: ETHANOL

DESCRIPTORS:

MAJOR CONCEPTS: Foods

BIOSYSTEMATIC NAMES: Ascomycetes--Fungi, Plantae

ORGANISMS: *Saccharomyces cerevisiae* (Ascomycetes)--fermentation agent,
industrial strains

ORGANISMS: PARTS ETC: plasma membrane

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Fungi; Microorganisms;
Nonvascular Plants; Plants

CHEMICALS & BIOCHEMICALS: magnesium ions--stress-protectant

METHODS & EQUIPMENT: brewing--beverage processing method; distilling--
beverage processing method; fermentation--beverage processing method

MISCELLANEOUS TERMS: ethanol toxicity; temperature shock; wine--
alcoholic beverage

CONCEPT CODES:

39008 Food and Industrial Microbiology-General and Miscellaneous
10060 Biochemical Studies-General
13502 Food Technology-General; Methods
22501 Toxicology-General; Methods and Experimental
23001 Temperature: Its Measurement, Effects and Regulation-General

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Summary

Document	Pages	Printed	Missed
US003868307	9	9	0
Total (1)	9	9	0

T /9/54,66,67,71,74,79,80,81,88

3/9/54 (Item 8 from file: 53)

DIALOG(R) File 53:FOODLINE(R): Food Science & Technology
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00507733 FOODLINE ACCESSION NUMBER: 343995

The role of microelements in beer fermentation.

Hegyes-Vecseri B; Hoschke A; Fodor P
Acta Alimentaria 22 (3), 248 (0 ref.)
1993

LANGUAGE: English

DOCUMENT TYPE: Journal article

FOODLINE UPDATE CODE: 19940609

ABSTRACT: A shortage of zinc was detected in Hungarian beers using inductively coupled plasma emission techniques. Brewer's yeast consumed almost all the inorganic zinc during the first day of fermentation. (Abstract of paper presented at the Lippay Janos scientific session organised by the University of Horticulture and Food Industry, 4-5 November 1992, Budapest, Hungary.)

SECTION HEADING: BEVERAGES

DESCRIPTORS: BEER; DETERMINATION; ZINC

3/9/66 (Item 2 from file: 144)

DIALOG(R) File 144:Pascal

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13353165 PASCAL No.: 98-0080523

Effect of calcium, magnesium, cobalt (II), and zinc cations on the Saccharomyces cerevisiae growth

PASTERNAKIEWICZ A; TUSZYNSKI T

Department of Fermentation Technology and Technical Microbiology,
Agricultural University, Cracow, Poland

Journal: Polish journal of food and nutrition sciences, 1997, 6 (4)
61-70

ISSN: 1230-0322 Availability: INIST-11688; 354000077365080070
No. of Refs.: 28 ref.

Document Type: P (Serial) ; A (Analytic)

Country of Publication: Poland

Language: English Summary Language: Polish

The effects of Ca SUP + SUP 2 , Co SUP + SUP 2 , Mg SUP + SUP 2 , and Zn SUP + SUP 2 and their combinations on growth and biomass yield of Mautner and YT Saccharomyces cerevisiae strains were studied using brewery wort and aerobic conditions. Zn SUP + SUP 2 and Co SUP + SUP 2 had a synergistic effect on the biomass growth. Higher concentrations (> 20 mmol/L and 20 µmol/L for Co) of Co SUP + SUP 2 plus Ca SUP + SUP 2 and of Co SUP + SUP 2 plus Mg SUP + SUP 2 reduced the overall dynamics and the yeast growth conditions, although, this effect was not pronounced in the initial growth phase. The Ca SUP + SUP 2 , Co SUP + SUP 2 , Mg SUP + SUP 2 , and Zn SUP + SUP 2 contents in the native wort did not provide an optimum growth condition for the yeasts. The wort should, thus, be supplemented with these ions.

English Descriptors: Calcium Ions; Magnesium Ions; Zinc Ions; Metal ion; Synergism; Saccharomyces cerevisiae; Microorganism growth; Tolerance; Culture medium; Beer wort; Environmental factor; Concentration effect; Cobalt Ions

Broad Descriptors: Ascomycetes; Fungi; Thallophyta; Brewer yeast; Ascomycetes; Fungi; Thallophyta; Levure brasserie; Ascomycetes; Fungi; Thallophyta; Levadura cerveza

French Descriptors: Calcium Ion; Magnesium Ion; Zinc Ion; Ion metallique; Synergie; Saccharomyces cerevisiae; Multiplication microorganisme;

Tolerance; Milieu culture; Mout biere; Facteur milieu; Effet concentration; Cobalt Ion

Classification Codes: 002A31B01B; 002A35C04; 215

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3/9/67 (Item 3 from file: 144)

DIALOG(R) File 144:Pascal

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13235187 PASCAL No.: 97-0504444

Requirements for zinc, manganese, calcium, and magnesium in wort

BROMBERG S K; BOWER P A; DUNCOMBE G R; FEHRING J; GERBER L; LAU V K; TATA M

Miller Brewing Co., 3939 W. Highland Blvd., Milwaukee, WI 53208-2866, United States

Journal: Journal of the American Society of Brewing Chemists, 1997, 55 (3) 123-128

ISSN: 0361-0470 CODEN: JSBCD3 Availability: INIST-11145; 354000068415560070

No. of Refs.: 16 ref.

Document Type: P (Serial) ; A (Analytic)

Country of Publication: United States

Language: English Summary Language: Spanish

The effect of wort zinc, manganese, calcium, and magnesium on fermentation performance was investigated in 2-L laboratory fermentations. Trace metals were added at different concentrations to a 16 Degree P wort. CO SUB 2 evolution rate, specific gravity, and pH were monitored throughout the fermentation. Fermentation performance was based on the time to end of fermentation. Under the conditions used, zinc was found to be maximally effective at a level of 0.1-0.15 mg/L; lower concentrations can result in slower fermentations. Zinc concentrations do not affect cell growth, but rather affect the specific rate of fermentation. The yeast's history with regard to zinc concentration has an effect on fermentation performance. No effect on fermentation performance was seen by increasing the manganese concentration fivefold, increasing the magnesium or calcium concentration twofold, or varying the Mg SUP + SUP + /Ca SUP + SUP + ratio from one to four.

English Descriptors: Inorganic element; Concentration effect; Beer wort; Property composition relationship; Zinc; Manganese; Calcium; Magnesium; Fermentation

French Descriptors: Element mineral; Effet concentration; Mout biere; Relation composition propriete; Zinc; Manganese; Calcium; Magnesium; Fermentation

Classification Codes: 002A35C04

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3/9/71 (Item 7 from file: 144)

DIALOG(R) File 144:Pascal

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03448632 PASCAL No.: 81-0490529

CAN ZINC IN YEAST BE USED AS AN INDICATOR OF THE WORT ZINC LEVEL.

JACOBSEN T

BREWING INDUSTRY RES. LAB./OSLO 3,NORWAY

REVENDEICATIONS

1. Tonneau à vin, destiné dans le domaine domestique à former un récipient pour la conservation du vin dans lequel le consommateur tire la boisson au fur et à mesure de ses besoins, le dit tonneau étant formé d'un corps (2) présentant deux embases (3) et (4) dont l'une (4) est équipée d'un robinet (5) pour délivrer le contenu, caractérisé par le fait qu'il renferme dans son volume intérieur (8) une poche (9) étanche, dans laquelle le vin est placé à l'abri de l'air, directement raccordée au robinet (5).
2. Tonneau à vin selon la revendication 1, caractérisé par le fait que la poche (9) solidaire du robinet (5) est amovible.
3. Tonneau à vin selon la revendication 2, caractérisé par le fait qu'il est formé en deux parties (10 et 11) emboîtables et dotées de moyens de liaison (12).
4. Tonneau à vin selon la revendication 1, caractérisé par le fait que le corps (2) est réalisé dans un matériau isolant thermique tel qu'une mousse de polyuréthane.
5. Tonneau à vin selon la revendication 2, caractérisé par le fait qu'une bague élastique (14) fendue ceinture le robinet (5) dans sa partie débouchant de l'orifice (13) réalisé dans l'embase (4) sur laquelle elle s'appuie.
6. Tonneau à vin selon la revendication 5, caractérisé par le fait que la bague fendue (14) présente un profil conique.
7. Tonneau à vin selon la revendication 5, caractérisé par le fait que la bague fendue présente une collerette saillante (16).
8. Tonneau à vin selon la revendication 2, caractérisé par le fait que l'embase (4) présente des moyens de positionnement (18) du robinet (5).
9. Tonneau à vin selon la revendication 8, caractérisé par le fait que les moyens de positionnement se présentent sous la forme d'une mortaise (18) réalisée dans l'embase (4) complémentaire à un tenon (19) solidaire du robinet (5).
10. Tonneau à vin selon la revendication 1, caractérisé par le fait que le corps (2) présente dans son volume intérieur (8) des moyens de surélévation de la poche (9) par rapport au robinet (5).

Journal: J. INST. BREW., 1981, 87 (4) 223

ISSN: 0368-2587 Availability: CNRS-5007

No. of Refs.: 4 REF.

Document Type: P (SERIAL) ; A (ANALYTIC)

Country of Publication: UNITED KINGDOM

Language: ENGLISH

LA TENEUR EN ZN DES CELLULES DE LEVURE NE PEUT ETRE UTILISEE COMME
INDICATEUR GENERAL DE LA TENEUR EN ZN DANS LE MOUT

English Descriptors: FOOD; CHEMICAL COMPOSITION; BIOLOGICAL INDICATOR;
BREWER YEAST; HEAVY METALS; BEER WORT; ZINC

English Generic Descriptors: MICROBIOLOGY

French Descriptors: ZINC; METAL LOURD; LEVURE BRASSERIE; COMPOSITION
CHIMIQUE; INDICATEUR BIOLOGIQUE; MOUT BIÈRE; ALIMENT

French Generic Descriptors: MICROBIOLOGIE

Classification Codes: 340A04G

3/9/74 (Item 3 from file: 203)

DIALOG(R) File 203:AGRIS

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02409021 AGRIS No.: 2000-060379

**Effect of zinc acetate added in grape must on some by-products of
fermentation content in wine**

Ruzic, N.E. (Faculty of Technology, Novi Sad (Yugoslavia))

Journal: Proceedings - Faculty of Technology in Novi Sad, Zbornik radova
- Tehnoloski fakultet u Novom Sadu, 1995-1996, v. 26-27 p. 27-31

Notes: 2 graphs; 1 table; 13 ref. ISSN: 0550-2187

Language: English Summary Language: English, Serbian

Place of Publication: Yugoslavia

Document Type: Journal Article, Summary

Journal Announcement: 2610 Record input by Yugoslavia

Fermentation experiments with artificially contaminated grape must with
zinc acetate showed that zinc in the amount 5 and 10 mg/l stimulated the
activity of yeast *Saccharomyces cerevisiae* marked as 25-C, but reduce the
activity of yeast *Saccharomyces bayanus* marked as S-4. After alcoholic
fermentation in samples with increased quantity of zinc more glycerol and
higher alcohols contents were detected than in control ones. Amount of
acetaldehyde was the same as in control samples or something smaller,
depending on wine yeast using for fermentation.

Descriptors in English: *WINES; *GRAPE MUST; *ZINC; *ALCOHOLIC
FERMENTATION; *ACETALDEHYDE; *GLYCEROL; *ALCOHOLS; ALCOHOLIC BEVERAGES
; ALCOHOLS; ALDEHYDES; BEVERAGES; CARBOHYDRATES; ELEMENTS; FERMENTATION;
FERMENTED PRODUCTS; FRUIT MUSTS; FRUIT PRODUCTS; HEAVY METALS; METALLIC
ELEMENTS; POLYOLS; PROCESSED PLANT PRODUCTS; PROCESSED PRODUCTS; SUGAR
ALCOHOLS;

Descriptors in Spanish: *VINOS; *MOSTO DE UVA; *CINC; *FERMENTACION
ALCOHOLICA; *ACETALDEHIDO; *GLICEROL; *ALCOHOLES; ALCOHOLES; ALDEHIDOS
; AZUCARES ALCOHOLES; BEBIDAS; BEBIDAS ALCOHOLICAS; CARBOHIDRATOS;
ELEMENTOS METALICOS; ELEMENTOS QUIMICOS; FERMENTACION; METALES PESADOS;
MOSTO DE FRUTAS; POLIALCOHOLES; PRODUCTOS DERIVADOS DE LAS FRUTAS;
PRODUCTOS FERMENTADOS; PRODUCTOS PROCESADOS; PRODUCTOS VEGETALES
PROCESADOS;

Descriptors in French: *VIN; *MOUT DE VIN; *ZINC; *FERMENTATION
ALCOOLIQUE; *ACETALDEHYDE; *GLYCEROL; *ALCOOL; ALCOOL; ALDEHYDE;
BOISSON; BOISSON ALCOOLISEE; ELEMENT CHIMIQUE; ELEMENT METALLIQUE;
FERMENTATION; GLUCIDE; METAL LOURD; MOUT DE FRUITS; POLYOL; PRODUIT A
BASE DE FRUITS; PRODUIT FERMENTE; PRODUIT TRANSFORME; PRODUIT VEGETAL

-6-

de fixer le robinet 5 sur l'embase 4. Pour ce faire, on enfle le robinet 5 à travers l'orifice 13 de l'embase 4 tel qu'illustré à la figure 4. Puis, on écarte la bague élastique 14 dans le sens des flèches repérées 20 au niveau de sa fente afin qu'elle puisse être introduite autour du robinet 5 suivant la flèche repérée 21 de la figure 4. Par son élasticité, la bague 14 revient en place et vient ainsi immobiliser le robinet 5 dans l'orifice 13.

Il est essentiel d'éviter toute introduction d'air dans la poche 9 au cours du tirage du vin. Pour cela, on peut mettre en place dans le volume intérieur 8 du tonneau 1 des moyens de surélévation de la poche 9 par rapport au robinet 5. Ces moyens peuvent par exemple se présenter sous la forme d'un plateau, incliné ou non, fixé dans la partie 10 et 11 du tonneau 1 de telle sorte à soulever la poche 9 par rapport au robinet 5.

De plus, ces moyens de surélévation permettent de vider intégralement la poche 9 sans effort.

L'invention trouvera sa place dans la cuisine ou la salle à manger du fait de sa contenance moyenne de 10 litres, le vin serait prêt à être consommé sans avoir à l'entreposer à la cave ou au cellier.

La restauration ou le débit de boissons pourrait proposer à leur clientèle des vins du tirage puisque l'aspect esthétique ne nuirait pas au cadre du local commercial. L'économie et son application dont le but est d'éviter la mise en bouteilles trop coûteuse rejoignent tous son sens.

L'utilisation du tonneau et l'économie qu'elle permet de réaliser en évitant la mise en bouteilles constituent les points importants de l'exploitation de l'invention.

D'autres mises en oeuvre de la présente invention, à la portée de l'Homme de l'Art, auraient pu également être envisagées sans pour autant sortir du cadre de celle-ci.